

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
Air Quality Division
1110 W. Washington Street • Phoenix • AZ 85007. Phone: (602) 771-2316
SIGNIFICANT PERMIT REVISION TO AIR QUALITY CONTROL
PERMIT

(As required by Title 49, Chapter 3, Article 2, Section 49-426, Arizona Revised Statutes)

This air quality control permit does not relieve applicant of responsibility for meeting all air pollution regulations

1. PERMIT TO BE ISSUED TO (Business license name of organization that is to receive permit) _____

Arizona Public Service Company

2. NAME (OR NAMES) OF OWNER OR PRINCIPALS DOING BUSINESS AS THE ABOVE ORGANIZATION

Arizona Public Service Company

3. MAILING ADDRESS 7522 South Somerton Avenue

Number Street

Yuma

AZ

85364

City or Community

State

Zip Code

4. ORIGINAL EQUIPMENT LOCATION/ADDRESS 7522 South Somerton Avenue

Number Street

Yuma

Yuma

AZ

85364

City or Community

County

State

Zip Code

5. FACILITIES OR EQUIPMENT DESCRIPTION Addition of two natural gas driven natural

gas compressors, 945 HP each

6. THIS PERMIT ISSUED SUBJECT TO THE FOLLOWING Conditions as described in attached

7. ADEQ SIGNIFICANT REVISION NUMBER 45450 PERMIT CLASS I

SIGNIFICANT REVISION ISSUED THIS _____ DAY OF _____, 2008

SIGNATURE

Nancy C. Wrona, Director, Air Quality Division

TITLE

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SIGNIFICANT PERMIT REVISION DESCRIPTION

This significant permit revision authorizes Arizona Public Service Company, Yucca Power Plant to add two new natural gas compressors of 945 HP each to its existing Operating Permit #31876. These compressors shall be used for boosting the pressure of the natural gas being used in the new combustion turbines permitted earlier under significant revision #41191 to operating permit #31876. In order to stay below the Prevention of Significant Deterioration (PSD) major modification threshold, the Permittee is voluntarily accepting emission caps of earlier significant revision #41191 for the two new combustion turbines which are 30.1 tons per year for NO_x, 91.8 tons per year for CO, and 10.50 tons per year for PM₁₀.

The project meets all the gatekeepers for a significant permit revision outlined in A.A.C. R-18-2-320.

ATTACHMENT "B"

Addenda (Significant Revision #45450) to Operating Permit # 31876 for Arizona Public Service Company, Yucca Power Plant

This significant permit revision #45450 issued to Arizona Public Service Company permits the addition of two new natural gas compressors of 945 HP each to existing Operating Permit #31876.

Following conditions shall replace the existing conditions of Section IX, Attachment "B" of Operating Permit #31876.

IX.B.1 Fuel Limitation

The Permittee shall only combust natural gas in Gas Turbine 5 or Gas Turbine 6.

[A.A.C. R18-2-306.A.2]

IX.C.1.a Synthetic Minor Emission Limitation

Total combined emissions of NO_x from Gas Turbine 5, Gas Turbine 6, and the two supporting natural gas compressors shall not exceed 30.1 tons per year, calculated and recorded daily as a rolling 365-day sum.

[A.A.C R18-2-306.01.A, -306.02, -331.A.3.a]

[Material permit conditions are indicated by underline and italics]

IX.E.1.a Synthetic Minor Emission Limitation

Total combined emissions of CO from Gas Turbine 5, Gas Turbine 6, and the two supporting natural gas compressors shall not exceed 91.8 tons per year, calculated and recorded daily as a rolling 365-day sum.

[A.A.C R18-2-306.01.A, -306.02, -331.A.3.a]

[Material permit conditions are indicated by underline and italics]

IX.F.1.a Synthetic Minor Emission Limitation

Total combined emissions of PM₁₀ from Gas Turbine 5, Gas Turbine 6, and the two supporting natural gas compressors shall not exceed 10.5 tons per year, calculated as a rolling 12-month sum.

[A.A.C R18-2-306.01.A, A.A.C R18-2-331.A.3.a]

[Material permit conditions are indicated by underline and italics]

Following Condition X shall be added to the Attachment “B” of the operating permit #31876.

X. Natural Gas Compressors (Internal Combustion Engines)-Alternate Operating Scenario

A. Applicability

This section is applicable to natural gas compressors identified in Attachment “D”.

B. Operational Limitations

1. Until such time that natural gas is supplied to Yucca Power Plant with sufficient pressure, the Permittee may install and operate the two new natural gas compressors for compressing natural gas to sufficient pressure to operate Gas Turbines #5 and #6. [A.A.C R18-2-306.A.2]
2. While the natural gas compressors are operating, the Permittee shall use the following emission factors to calculate the emission numbers for NO_x, CO, and PM₁₀ for determining compliance with the voluntarily accepted limits in conditions IX.C.1.a for NO_x, IX.E.1.a for CO, and IX.F.1.a for PM₁₀ above.
 - a. NO_x: 7.17 pounds per hour
 - b. CO: 3.98 pounds per hour
 - c. PM₁₀: 0.07 pounds per hour [A.A.C R18-2-306.A.3.c]
3. The rolling 365-day emission totals for NO_x and CO and rolling 12-month emission total for PM₁₀ shall be computed by taking into account the above emission factors and the operating hours of each natural gas compressor along with the emissions from the turbines that are tracked by CEMS. [A.A.C R18-2-306.A.3.c]

C. Fuel Limitations

The Permittee shall only combust natural gas in the natural gas compressors.

[A.A.C. R18-2-306.A.2]

D. Particulate Matter

1. Emission Limitation and Standards
 - a. The Permittee shall not cause, allow or permit the emission of particulate matter, caused by combustion of fuel, from any natural gas compressors into the atmosphere in excess of the amounts calculated by the following equation:

$$E = 1.02 Q^{0.769}$$

Where

E = the maximum allowable particulate emission rate in pounds-mass per hour

Q = the heat input in million Btu per hour [A.A.C. R18-2-719.C.1]

- b. For purposes of this Section, the heat input shall be the aggregate heat content of all fuels whose products of combustion pass through a stack or other outlet. The total heat input of all operating fuel-burning units on a plant or premises shall be used for determining the maximum allowable amount of particulate matter which may be emitted. [A.A.C. R18-2-719.B]

2. Monitoring, Reporting, and Recordkeeping

- a. The Permittee shall monitor daily lower heating value of the natural gas being combusted in the natural gas compressors. This requirement may be complied with by maintaining a copy of that part of the Federal Energy Regulatory Commission (FERC) approved Tariff agreement that limits transmission to pipeline quality natural gas having a heating value greater than or equal to 967 Btu/ft³. These records shall be made available to ADEQ upon request. [A.A.C. R18-2-306.A.3.c and -719.I]
- b. The Permittee shall notify the Director in writing within 30 days of any changes to the FERC approved tariff agreement relating to natural gas sulfur content and lower heating value that occur during the term of this permit. [A.A.C. R18-2-306.A.5.a]

3. Permit Shield

Compliance with this Part shall be deemed compliance with A.A.C. R18-2-719.C.1, and A.A.C. R18-2-719.I. [A.A.C. R18-2-325]

E. Opacity

1. The Permittee shall not cause, allow or permit to be emitted into the atmosphere from any natural gas compressors, smoke for any period greater than 10 consecutive seconds, which exceeds 40% opacity. Visible emissions when starting cold equipment shall be exempt from this requirement for the first 10 minutes. [A.A.C. R18-2-719.E]
2. Monitoring, Reporting, and Recordkeeping

A certified EPA Reference Method 9 observer shall conduct a monthly survey of visible emissions emanating from the stack of the natural gas compressors, when in operation. If the opacity of the emissions observed appears to exceed the standard, the observer shall conduct a certified EPA Reference Method 9 observation. The Permittee shall keep records of the initial survey and any EPA Reference Method 9 observations performed. These records shall include the

location of the emission point observed, name of observer, date and time of observation, and the results of the observation. If the observation results in a Method 9 opacity reading are in excess of 40%, the Permittee shall report this to ADEQ as excess emission and initiate appropriate corrective action to reduce the opacity below 40%. The Permittee shall keep a record of the corrective action performed. [A.A.C. R18-2-306.A.3.c]

3. Permit Shield

Compliance with this Part shall be deemed compliance with A.A.C. R18-2-719.E. [A.A.C. R18-2-325]

F. Nitrogen Oxides

1. Emission Limitations and Standards

The Permittee shall not cause or allow to be discharged into the atmosphere NO_x emissions from the stack of natural gas compressors in excess 7.17 pounds per hour.

[A.A.C. R18-2-306.01.A, A.A.C. R18-2-306.A.2, -331.A.3.a]
[Material Permit Condition is indicated by underline and italics]

2. Monitoring, Reporting, and Recordkeeping

The Permittee shall keep daily and cumulative records of the hours of operation of each natural gas compressor. [A.A.C. R18-2-306.A.3.c]

3. Testing Requirements

a. Performance Test [A.A.C. R-18-2-312.A]

Within 90 days after each compressor reaches 2000 hours as determined in Condition X.F.2 above, the Permittee shall conduct a performance test on the stack of the natural gas compressor to demonstrate compliance with the emission limit for NO_x specified in Condition X.F.1 above and furnish the Director a written report of the results of the test.

b. Testing Methods [A.A.C. R18-2-312.B]

Performance tests shall be conducted and data reduced in accordance with the EPA Reference Method 7E to determine the NO_x emission rate from the natural gas compressor.

ATTACHMENT "D"
Addenda (Significant Revision #45450) to Operating Permit # 31876
for Arizona Public Service Company, Yucca Power Plant

EQUIPMENT LIST

Following equipment shall be added to the Equipment List, Attachment "D" of Operating Permit #31876.

| Description | Maximum Capacity | Make/ Model | Serial Number | Equipment ID | Date of Manufacture |
|------------------------|------------------|-------------|---------------|--------------|---------------------|
| Natural Gas Compressor | 945 HP | Caterpillar | TBD | TBD | TBD |
| Natural Gas Compressor | 945 HP | Caterpillar | TBD | TBD | TBD |